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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/600,757

06/23/2003

Byeong Koo Kim

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5730

7590

10/05/2004

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EXAMINER

VU, PHU

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/600,757	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> Phu Vu	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11, 13, 15-24 and 28-34 is/are rejected.
- 7) ☒ Claim(s) 8-10, 12, 14 and 25-27, 28-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

Claims 11, 12 and 28-29 objected to because of the following informalities: claims 22 and 23 state: "separated from the static electricity prevention circuit, the another static". Appropriate correction is required. Suggested correction change "the" to "then." For examining purposes the will be considered as then in these instances.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1 – 3, 7, 16, 18 – 20, 24 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu et. al US Patent 6175394.**

Regarding claims 1 and 18, Wu discloses a liquid crystal display for preventing static electricity comprising: a signal pad part for applying a driving signal to be inputted to the signal lines of the picture display part (see figure 9), wherein the signal pad part includes: a plurality of pads connected to respective ones of the signal lines (see figure 9 element 112 and 114), and a static electricity prevention circuit having a TFT (figure 9 element 50) with a floating gate (see abstract) for connecting at least one of the said pads with an equipotential line (see element 130 "shorting ring" or "guarding ring") in the

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presence of static electricity. The reference does not disclose a plurality of liquid crystal cells but all liquid crystal displays will have a plurality of liquid crystal cells therefore this limitation is inherent to the reference. Regarding claim 18, this claim mirrors claim 1 and since this adds no structural limitations the rejection applies to claim 18 as well.

Regarding claims 2 and 19, the reference does not explicitly disclose that the static electricity prevention circuit causes one of the said pads to be insulated from the equipotential line and the other pads when the driving signal is applied to the other pads so as to apply the driving signal to the signal lines of the picture display part but, but since the transistors composing the static prevention circuit can be switched off effectively insulating the equipotential line from the other pads this limitation is inherently met by the reference. Regarding claim 19, this claim mirrors claim 2 and since this adds no structural limitations the rejection applies to claim 19 as well.

Regarding claims 3 and 20, the reference discloses a first capacitor (see element C1 in figure 3) connected between the floating gate and a first terminal of the thin film transistor connected to the equipotential line (see figure 9 element 130); and a second capacitor (see element C2 in figure 3) connected between the floating gate and a second terminal of the thin film transistor connected to the one of said pads (see figure 9 element 112 or 114). Regarding claim 20, this claim mirrors claim 3 and since this adds no structural limitations the rejection applies to claim 20 as well.

Regarding claims 7 and 24, the reference discloses a pad (elements 112/114) connected to a node between the static electricity prevention circuit (element 50) and

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the picture display part (element 122). Method claim 24 introduces no structural limitations therefore the rejection follows claim 7 rejection.

Regarding claims 16 and 33, the reference does not formally define "link pad" pad therefore for examining purposes it is take to be an interface for driving the panel. Since any liquid crystal display must include a interface to control and drive the panel this element is inherent to the reference.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 4 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu as applied to claim 1 / 18 above, and further in view of Kwon 6753836.**

Wu discloses all the limitations of the claim except another static electricity prevention circuit formed between one of the said pads and a first drive voltage supply line and a second drive voltage supply line for bypassing the static electricity flowing from one of the said pads into at least one of the first and second voltage supply lines. Kwon discloses two static electricity prevention circuits (see figure 6 elements MN51 and M251) formed between one of the said pads (element 300) and a first drive voltage supply line (Vcc) and a second drive voltage supply line (Vss) for bypassing the static

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electricity flowing from one of the said pads into at least one of the first and second voltage supply lines in order to provide electrostatic discharge protection without diminishing display performance (column 7 line 65 – column 8 line 4). Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to implement two static electricity prevention circuits to provide improved electrostatic discharge protection without diminishing display performance. Regarding claim 21, this claim mirrors claim 4 and since this adds no structural limitations the rejection applies to claim 21 as well.

**Claim 5-7, 22-24, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu. For rejection of base claims 1 and 18 see rejection above.**

Regarding claims 5-7 and 22-24, since a link line already connects the equipotential line (element 130) and static electricity prevention circuit (element 50) and the reference also discloses that the equipotential line is removed a grinding line is inherent to the reference. The grinding line could arbitrarily be placed to meet the limitations of claims 5-7 and 22-24 since the claim only refers to different portions of the “link line” falling between various zones.

Regarding claims 11, 28 and 29, the reference does not disclose “one of the said pads separated from the static electricity prevention circuit, then another static electricity prevention circuit and the signal lines of the picture display part by the grinding process in which the equipotential line is removed.” However, a removal of the equipotential line is disclosed by the reference.

Claims 5-7, 22-24, and 11, 28-29 introduce a product by process limitation that can be met by arbitrarily placing the grinding line to meet these limitations.

**Claims 13 and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu as applied to claim 1 above, and further in view of Ha US Pub. No. 2002/0057392.**

Wu discloses all the limitations of claim 13, except a resistor connected between the static electricity prevention circuit and the picture display part for limiting current. Ha discloses a resistor between the static electricity prevention circuit and picture display part (see figure 4. elements R1 and R2) to prevent distortion of the signals (see [0046]). Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to add resistors between the static electricity prevention circuit and picture display part to prevent distortion on the gate, data or input signal lines. Claim 30 mirrors claim 13, therefore the rejection applies to claim 30 as well.

**Claims 15 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu as applied to claim 1 above, and further in view of Kim US Patent 6072550.** Wu discloses all the limitations of claim 15 except, at least one resistor connecting one of said pads to the equipotential line. Kim discloses a resistor connecting an input pad (element 13) to the equipotential line (element 20) to limit current flowing into the equipotential line (discharge bus) (column 7 lines 62-67). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to connect a resistor between the equipotential line to a pad because this will



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reduce current flowing into the equipotential line. Claim 32 mirrors claim 15, therefore the rejection follows claim 15.

**Claims 17 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu.**

Wu discloses all the limitations of the claims 17 / 33 except a plurality of test pads connected to the signal lines of the picture display part for inspecting the display part. However, it is notoriously well-known in the art to include test pads connected to picture elements for testing. Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to include test pads for the purpose of testing defects.

***Allowable Subject Matter***

Claims 8-10, 12, 14, 25-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: There is no prior art that teaches a said pad connected to the static electricity prevention circuit through a first link line and connected to another static electricity prevention circuit through a second link line found in claims 8 and 25.



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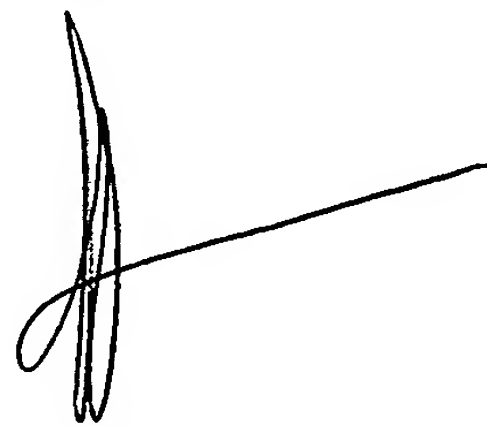
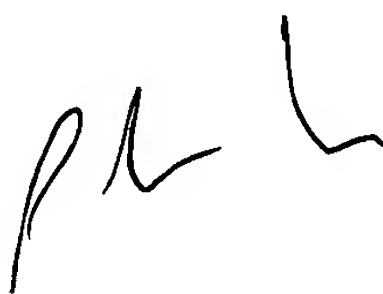
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562. The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu Vu  
Examiner  
AU 2871



**KENNETH PARKER  
PRIMARY EXAMINER**